Wordsmithing in Medical Toxicology: A Primer on Portmanteaus

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port•man•teau[1]
1. a large suitcase
2. a word or morpheme whose form and meaning are derived from a blending of two or more distinct forms (as smog from smoke and fog)

The history of language is littered with neologisms. When different cultures met, some words were subsumed - "hamburgesa," the Spanish word for hamburger is an example. Sometimes spelling is changed in order to denote a cultural difference. There are a number of words that end in 'er' in American English, but finish with a 're' in the British usage. Finally, some words are simply combined, deriving their meaning from their individual components, but in their artistry and simplicity are able to exceed the sum of their parts. Words such as these, a particular form of neologism called a portmanteau, can denote an entire idea in a single instant and provide the wordsmith with a particular type of joy.

The art of the portmanteau has had a recent resurgence. In popular culture names such as "TomKat," "Brangelina," and "Bennifer" have been used ad nauseam to refer to celebrity couples. When discussing the weather, it has been difficult to avoid "snowpocalypse" or "snowmageddon." These types of terms have other more pervasive entries into everyday life - who hasn't had a Frappuccino® while enjoying a brunch, perhaps using a spork to do so?

The benefit to these shortcuts involves speaking in a more efficient manner. The practice of medicine itself frequently employs not only portmanteaus, but also other neologistic shortcuts, such as by turning acronyms into words in the case of "cabbage" (CABG), "foosh" (fall on an outstretched hand), or the very well known "cat scan" (computed axial tomography). Emergency Medicine also has its own lexicon: "rectalizing" when needing to perform a rectal exam and "antibiosing" when one plans to provide antibiotics are examples. Even our staffing patterns are fair game, with "nocturnalists" frequently providing our overnight emergency department coverage. Finally, other terms such as "dilaudopenic" or "opiophilic" are self-explanatory. The art and practice of Medical Toxicology plays well to this type of verbal repartee, and it is in this vein the following terms are shared:

POISONTATION

Perhaps the best known toxicologic portmanteau is the "toxidrome" – a concept with which we are all familiar. A toxidrome is a constellation of signs and symptoms that point in the direction of a particular ingestant or class of medications, such as opioids, sedative-hypnotics, cardiovascular drugs, etc. However, the converse ought also be true – if a patient has ingested a particular medication or drug, one would expect them to manifest certain signs and symptoms as "proof" that they have done so. This concept of drug-centered symptomatology is better referred to as a "poisontation" – how ought a patient's presentation be influenced by their poison?

SYMPATHOMIMESIS

Medications that activate the fight-or-flight side of the autonomic nervous system are referred to as "sympathomimetics." Cocaine and amphetamines are likely the best known illicits, while therapeutically our armamentarium of pressor agents behaves in this manner. However, there is no great term for how they work. The root of "mimetic" belongs in the Greek word mimesis which means "to imitate." As these substances imitate our naturally occurring catecholamines, it is no great stretch to define their mechanism as acting through the process of sympathomimesis.

ASYMPTOMATICITY

The corollary to "poisontation" is the concept of "asymptomaticity." As we know from the father of medical

toxicology, Paracelsus, "all things are poison but for the dose." Similarly, patients may present with symptoms that exist on a spectrum, or may have no symptoms at all.

The degree to which asymptomatic patients present is what defines "asymptomaticity" – the pediatric patient that may have ingested a medication but who is actively running around the room, unless they are manifesting sympathomimesis, would be considered to have a high degree of asymptomaticity. However, the depressed young adult who may have ingested a bottle of his or her antidepressants but is pleasant, conversant, and not somnolent nor tachycardic at the time would not as they are at a higher risk for a serious ingestion and these medications can have delayed effects.

Asymptomaticity should be used in a manner that allows for rapid and concise clinical communication of how asymptomatic the patient currently is, and what our predicted course will be. We will likely discharge the first patient home, but may admit the second patient for observation to ensure that he does not become symptomatic.

DIGIBOUND

Patients who take digoxin are at risk of becoming toxic from this medication due to its narrow therapeutic window. In either acute overdose or in chronic use complicated by changes in renal function or protein binding, significant elevations in the serum concentration may affect multiple organ systems. Classically, this presents with nausea and vomiting, cardiac conduction abnormalities (AV block, atrial fibrillation with slow ventricular response), and hyperkalemia. In these patients, the use of a very elegant antidote is preferred – digoxin-Fab fragments. This antidote, which goes by the trade name of Digibind®, uses antibody fragments targeted at the digoxin molecule to bind it and prevent its clinical effects. Thus, when the patient has been dosed with Digibind, he or she may be considered to be Digibound, as "bound" is the past tense of "bind."

CHARCOTHORAX

One of the great fears of using activated charcoal as a decontamination method in patients who may become somnolent or obtunded and then vomit without an ability to adequately protect the airway is the potential for aspirating charcoal. In these patients, some toxicologists recommend against the routine use; however, if the patient is intubated one can easily instill it through a nasogastric tube, keeping in mind that intubation solely to administer activated charcoal is generally not recommended.

Occasionally, and potentially more disastrously, NG tubes will find their way out of the esophagus and into the pleural space and may appear to be in the correct location radiographically; this has been described in the literature following difficult intubations.[2] While the available data do not necessarily paint this as a high-probability occurrence, when it does occur "activated charcoal administration misadventure" is a bit lengthy and wordy for discussing the clinical entity. As such, the author proposes the term "charcothorax" – as a play on such terms as pneumothorax and chylothorax, it describes the presence of activated charcoal in the pleural cavity perfectly.

TOXANTHEM

In the realm of infectious disease, an exanthem is a dermatologic manifestation of a systemic disease, typically viral – though Strep and Staph species have been considered causative for Second Disease and Fourth Disease, respectively.[3] Exanthems may also be caused by immunologic disorders such as lupus, or by drugs and toxins.

An acronym already exists to discuss drug-associated rashes, namely DRESS syndrome. DRESS refers to Drug Rash with Eosinophilia and Systemic Symptoms, and is an umbrella term for any drug-related rash that manifests these findings. However, reactions such as the anticonvulsant hypersensitivity syndrome are due to specific biochemical processes and cause specific dermatologic changes that can be seen on biopsy, and deserve to have a specific subset dedicated to them.

As such, to prevent confusion when discussing medication-associated exanthems, as well as to differentiate these conditions from the more broad DRESS syndrome, this author uses the term toxanthem – a toxic exanthem – as it evokes the meaning of exanthem while clearly delineating it as being caused by a certain subset of medications.

HONORABLE MENTIONS

The following two terms are not the author's creations, but do hold special significance to medical toxicologists. Acetadote® - the branded intravenous formulation of N-acetylcysteine, used in cases of acetaminophen poisoning to both prevent and treat hepatotoxicity – is a portmanteau of acetaminophen antidote. Apocryphally, Reversed – one proposed trade name for flumazenil, which directly antagonizes GABAA receptors in the case of benzodiazepine poisoning – comes from the desired outcome of reversing Versed®. Due to concerns about accidental dosing, the ultimate trade name of flumazenil became Romazicon®.

CONCLUSION

The practice of emergency medicine is fast-paced and frequently requires being able to adequately and accurately convey information in a rapid manner. The development of pronounceable abbreviations and frank neologisms facilitates this, and this author would argue that concept is nearly universal within the emergency medicine community. These added terms presented above can help bring this to the realm of medical toxicology, especially as we often interact with our fellow emergency physicians. To the author's knowledge, these terms have not been used previously within the emergency medicine or medical toxicology literature,

per an exhaustive search within PubMed and multiple online search engines – Google, Bing, and WolframAlpha. The author's words, however, are not the be-all and end-all of this phenomenon, but rather are hoped to be a starting point for an entirely new generation of wordplay that adds both substance and style to the practice of medical toxicology.

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